

SEQUENCE LISTING



#14  
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(1) GENERAL INFORMATION:

(i) APPLICANT: ENTERPRISES, LTD., QBI

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(ii) TITLE OF INVENTION: GENE IDENTIFICATION METHOD

(iii) NUMBER OF SEQUENCES: 36

(iv) CORRESPONDENCE ADDRESS:

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(v) COMPUTER READABLE FORM:

(A) MEDIUM TYPE: Floppy disk  
(B) COMPUTER: IBM PC compatible  
(C) OPERATING SYSTEM: PC-DOS/MS-DOS  
(D) SOFTWARE: PatentIn Release #1.0, Version #1.30

(vi) CURRENT APPLICATION DATA:

(A) APPLICATION NUMBER:  
(B) FILING DATE:  
(C) CLASSIFICATION:

(viii) ATTORNEY/AGENT INFORMATION:

(A) NAME: Montgomery, Ilene N.  
(B) REGISTRATION NUMBER: 38,972  
(C) REFERENCE/DOCKET NUMBER: 0168-00022

(ix) TELECOMMUNICATION INFORMATION:

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(2) INFORMATION FOR SEQ ID NO:1:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

(A) DESCRIPTION: /desc = "Primer"

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

TCTGTAGGTA GTTTGTC

17

(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 19 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

(A) DESCRIPTION: /desc = "Primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

TGGAGGCCTA GGCTTTTGC

19

(2) INFORMATION FOR SEQ ID NO:3:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 23 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

(A) DESCRIPTION: /desc = "Primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

GTAAGGTTCC TTCACAAGGA TCC

23

(2) INFORMATION FOR SEQ ID NO:4:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 45 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid  
(A) DESCRIPTION: /desc = "Primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

CTAATACGAC TCACTATAGG GCTCGAGCGG CCGCCCGGGC AGGTA

45

(2) INFORMATION FOR SEQ ID NO:5:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 45 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid  
(A) DESCRIPTION: /desc = "Primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

CTAATACGAC TCACTATAGG GCTCGAGCGG CCGCCCGGGC AGGTG

45

(2) INFORMATION FOR SEQ ID NO:6:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 43 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid  
(A) DESCRIPTION: /desc = "Primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

CTAATACGAC TCACTATAGG GCAGCGTGGT CGCGGCCGAG GTG

43

(2) INFORMATION FOR SEQ ID NO:7:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid

- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: other nucleic acid
- (A) DESCRIPTION: /desc = "Primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

AGCTTACCTG CCCGG

15

(2) INFORMATION FOR SEQ ID NO:8:

- (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: other nucleic acid
- (A) DESCRIPTION: /desc = "Primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

GATCCACCTG CCCGG

15

(2) INFORMATION FOR SEQ ID NO:9:

- (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 22 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: other nucleic acid
- (A) DESCRIPTION: /desc = "Primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

CTAATACGAC TCACTATAGG GC

22

(2) INFORMATION FOR SEQ ID NO:10:

- (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 22 base pairs
- (B) TYPE: nucleic acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid  
(A) DESCRIPTION: /desc = "Primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

TCGAGCGGCC GCCCGGGCAG GT

22

(2) INFORMATION FOR SEQ ID NO:11:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid  
(A) DESCRIPTION: /desc = "Primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

AGCGTGGTCG CGGCCGAGGT

20

(2) INFORMATION FOR SEQ ID NO:12:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid  
(A) DESCRIPTION: /desc = "Primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

AGCTTACCTC GGCCG

15

(2) INFORMATION FOR SEQ ID NO:13:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid  
(A) DESCRIPTION: /desc = "Primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

GATCCACCTC GGCCG

15

(2) INFORMATION FOR SEQ ID NO:14:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 43 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid  
(A) DESCRIPTION: /desc = "Primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

CTAATACGAC TCACTATAGG GCAGCGTGGT CGCGGCCGAG GTA

43

(2) INFORMATION FOR SEQ ID NO:15:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 660 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

GATCCAAGCG AAAAAGGGAA TAAGAAGGGA GGAATGTAAC TAGGAGCAGC TCCCAACAGT  
60

TTGCCTATGT ATTTGCCAGC ACCAAAATTT GTAGAGTAAG CCACTTACAT TTCCACTGCT  
120

AGTATTAAGG AAAGACAGCA GTGGTGATTT TTATAAAGCG AGTATACATT TATTTTTATT  
180

CTGATATGTG AATTTTCTT TCACGAGTTA ATTAAGTGGT AATTTGTAAA CAGTGGGAAG  
240

AAGATTAGAA CAATTATGGA GGTACTGAAT TACACAAGGA GATTAAAATG AAATGAATCA  
300

ATCTACCTAT CTTGTGGTTA GTTAATATTT ACCATGATGC ATACACTTGA GAAATGAGAA  
360

ATGCCCAAAT TGTATAATGC ATTATCTTNN TTATTATTTA TTNNNGTAAA TAATTCTTGC  
420

TNNACATTAN NCTNCAAGGN TAGCTNTATC TATACTTGNT AGCTANNTTC TTATACAAAG  
480

CANGTNTCTT TTGAANATGA TTTACCNATT AANTANANNA GCTTAGGTGC CTNNTTTNAC  
540

TCTGGNTNGT CATNTTGNTT NNCTTTTNNC NANATCATAT ATAATTTCCA NNGAATGTTG  
600

ATNTNTNTCC TCAANTTNCA TTNTANCCNG NGCNTATCCT NTNNNNTGNT NGNNTATGTC  
660

(2) INFORMATION FOR SEQ ID NO:16:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 526 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

GATCCTGGTA TAATGTGATT GAATTATGAA GGCAAATTC TCATGAATGG TTCAGCACCA  
60

TCCCCTTGTA CCATCCTCAC AATAATGAGT AACTTCTCAT GAGATGTAGT CACTGAAATC  
120

TCTATATCAC CTCCCCACTC TCCGTGTTTT CTCCTTGCCA TGTGAGACAA TTGATTCTTT  
180

CTTTGCCTTC CATGATTATT GAAAGATTC TGAGGCCTAG AAGCAGAAGC ACTGTGCTTA  
240

GAACCATGAG CCAATTAAAC CTCTTTTTC AATAAATCA TACGGGAAAT GGCAAATGAG  
300

GACTGGAGCG TTGCTATAAA GATACCTGGA AATGTGGAAG CAGCTTTGGA ACCAGGTAAT  
360

GGACGGAGGT TGAAGAGTT TGGAGGGCTC AAAAGAAGAC AGATGAGAAA ACTTTTGGAC  
420

CATCTTAGAG TCTGGTTCAA TGGTTGTGAC AAAAATCCTG ACAGAAACAT GGACAGTGAA  
480

GGCCAGGCTG AGGAGGTCTC AGAGAGAAAT AAGAAGCTTT TTGCAA 526

(2) INFORMATION FOR SEQ ID NO:17:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 485 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

AAACATTATG CACAGAGGAA TAAAATTAAG AATGACCACA GTCTTCTCTT CAGAAATTAT  
60

GCAAGCCAGA ATAGAGTAGA GCAACATCTT TACAGTTCTT AAAGAAAAAA TATATCAACT  
120

TAGAATTCTA TACCCAGCAA AAATATATTT CAAAAGAAG ACACAATACT TTTTCAGACA  
180

GACAAAAGCC AAGAGAGTAA TTCCAGGGAC GTGTAATATA AGAAATATTA GTGAAAGTAG  
240

TGTAAAGAAT GAGAGAGAGG AAATATAAGG ATACTGTTAT AATATCCCTA CACTGTACCT  
300

TAAGTGGATT GTAATATTAT CTGAAGGTAA ACTGTAATAT GTTAAATAAA GATGTATATT  
360

TTTAATCCTA GAGAACTGC TATGAAAACA AAAAGTAAAA CAAAGTGGTA TTAATAACAA  
420

GCCAATAATG GAGATAAAAT GGGCAATAGA AAACAACAAC AAAAATTCAA TCCAAAAGAA  
480

GGAAG

485



(2) INFORMATION FOR SEQ ID NO:18:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 183 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

GATCCCTCTG GCACTGGGAT GCTTCCACAG ATGTACCTGA AAAGTCGTCA CTCTCTCACC  
60

AAGGAGGAAG AAGCAGTACT TTTTGTCTC ATAGCATTAG TAACCAAGCT AATGTTCCACC  
120

AGTCTGTCAT TAGCTCCTGG CTCAGCACTG ATCCTGCAAA AGACCGAATT GAAATCACAA  
180

GCT 183

(2) INFORMATION FOR SEQ ID NO:19:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 602 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

GGGACATGGT TGGGCCATGC CACACCAGGG CTGGTGAGGC AACCAGTTTT GATTTTGACA  
60

GAGTGGCTGG AGGAAAAGTG GCAATCAAGG TGCTGCTTGG TTTGCTCTGA GTGCAAATGG  
120

AACCAACAGG TTTCTGCTGC AATCTGTGTG TTCCCAGTGC CAGGTCACAC CAGGAGGGGT  
180

GGGGCAGGGC TAACCAAGTG GTCTCTGAAC TCACCGAGCG TCTGCACTTG GTTGTGAAGT  
240

TAATGGGAGT ACAGAGAGCG TCTGGCCTTG GAGAGGGGTT GAGAGCCTCC TTTTGGTTC  
300

TTCATTCTG AGCTCTGCC TGCCACAAA TCTGACCTCT TTGAATGGGG ACGCAGTCCT  
360

TCAACAGAGA AGTTTCTATG GCAAAGAAGT TTCTATTTAG CTCTAGATCC AGCAGAGTCA  
420

TCCATTCTAA CTGCCCTGAA GTCTAGAGCA GGGGAGGGAA CCCAGAGGCT GGGGATGAGA  
480

CTAGGCAGAC CCTGGTTACC ATATGGACAA GGACAGGGGA AAGCACCCCC TTCCTCAATT  
540

TCTGAAAGTT CTATCTTTGG GTTCGCTGGA CTTTGAGGAT GATAAAGAAC ATNTAGGTAC  
600

TA 602

(2) INFORMATION FOR SEQ ID NO:20:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 75 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

AAGTGGGACT CTGGGCCTCT GACCAGCTGT GCGGCATGGG CTAAGTCACT CTGCCCTTCG  
60

GAGCCTCTGG AAGCT 75

(2) INFORMATION FOR SEQ ID NO:21:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 497 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

GATCCTANAC CTGCTCTTTC TCTAATCTTC TGTATCTTAG CAATCGGCCA AAAAAGTTGA  
60

AATCATACTT GATTTCTCCT GGCCCTCAAA GCCTACATTC ATTCTGCCAA ATCATGTAAG  
120

TCCATCTTTA AAATTTATAC TGAAGTGCA TTTCTTCTTA TCTCCATTAC TATCACCCAA  
180

GTTCAAAATC CTTTCTTATT TTTCACCTGA GTATTGCAAT ATTTTCTTAG ATGACCCTAA  
240

CTGATCTTGC CGTTTCTACT CTGCTTTTCC TACAGTCAAT TCTCTTCATA TATGCCAACA  
300

TTACCTTTTA AAAGTACAAA CAAGTTCAGG TTAAGTCTTC CTGCTCAAA GTCTCAAATA  
360

TCTTTTATC ACACACAAAT CAAAGGTGGC TAAGAATGGT CTGGGTCCTG CATACCTCTC  
420

CAATGTCATC TACAGCATCT CTGACTTTCT CGCACTGCTC TGGTCACAGT GGTCTTCTTT  
480

TTCTCTAATA CACTAAG

497

(2) INFORMATION FOR SEQ ID NO:22:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 519 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:

TCCAGAGCAA ACATTACATC ATAGGCCATG GGGGTTGTCA CTTAGCTGCA TGCTAAGAAT  
60

CCTCATATGC TGCTTTGAAA ACGCCATAAA AAAGTAAGAT GCCCTCATAC ACAGAAAAAA  
120

GGAGTTGGGC CAACAGCCTG CGAGAGAAGA TCCTTCCCAA CTCTGCCATT CTTACTGCAG  
180

GAGGGTTTGT AATGCTTCCC CACTTCCTCA GGTCCAGCGA CTGCACCTCC ACCACTGGAG  
240

TGGGGGACAC TTCCATTGCT GATGGAAGCT GCCTACTGCT TTAAAAACA CACACATGAG  
300

CTGAGAAGTT CTGCTGAAGG TGGGGAGAGT GCTGCTCTTG GCTGCCAGCC GGGTCTAGCG  
360

GCCCTAACAA GGGAAACTGG CTGATACAAA ATGGATCACT GCCTGAGATA TATGAACTGG  
420

ACTGAGGATA GAAGTTGCAT CCGCTGGGCA AAATGTGCCA AAGAACAGAA AGTCTTTCAA  
480

TTTATTCTTT TAGGCACCAA GAATAAATAA ATNCTAAGA 519

(2) INFORMATION FOR SEQ ID NO:23:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 375 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

GGGTGAAGCA TCTGNTTCAT NACACAGGGC TATCATAATT GGGTTCTGGA AATGGAATGG  
60

GTCTCTAAAC ATTTTAATGC CCCAGCTTGG TATTGGACNC AATGCAAGAT GGCTAAAATC  
120

TTCATTTAAA ATTCAAGGGT ATTGCTTGCT ATTCACATT ATATACTTTT TAAATACTAT  
180

TGCTCTTTGC ATATGAGGCA TTCTACTAAC CTTGGATCAT TGGATCTTAA ACATGATAAT  
240

ATAGAATATC TGAACATTGG ACTTGNTCTT TAGAGTATAT GGCCTTTAGT TCTTGTGGAA  
300

CTAAATACAG TGATTCTAAG ATCAAAAAGTC TTAGTGTTTG GGGTTTTTTT TTCCTCTTTT  
360

TGGATATGGG GTGTT 375

(2) INFORMATION FOR SEQ ID NO:24:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 382 base pairs
- (B) TYPE: nucleic acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

ATCCAGCGGN TCAGCACACA CTGGGGCCTA CCGGAGTGGG AGGGAGGGAC AGGGATGAGG  
60

GAAAAATAAC TAATGGGTAC TAGGCTTAAT ACCTGGGTGG TGAAATAATC TGTACAACAA  
120

ACTCCCATGA CACAAGTTTA CCTTTACAAA CCTGCACATG TACCCCTGAA CTTAAAGAAA  
180

AGTTTTTTTA AAAAATCACA CTTCCAGAGT TTGCTAAATA ATTATGACCA GTATTTTACT  
240

ACCATCTTCT TCCTTGGTGA ACTACTAAAA TTAGTAAATT TATGTAAAAA ATGAAGTTCT  
300

CCCTAGAAAT CAAAAGTGCA GTCTAAGCAC TGAAAATGTT CTATCAACAC TTGTAACTG  
360

AGAACCATTG AAACATCTAG GA

382

(2) INFORMATION FOR SEQ ID NO:25:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 586 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:

TNCGGATGAG ATAGTGAAAG AGTTCATGAC TCCCCGGAAG CTGTCCTTCG GCTTTCAGTA  
60

GCACTCGTTT TACATATGCT TATAAAAGAA GTGATGTATC AGTAATGTAT CAATAATCCC  
120

AGCCCAGTCA AAGCACCGCC ACCTGTAGGC TTCTGTCTCA TGGTAATTAC TGGGCCTGGC  
180

CCCTGTAAGC CTGTGTATGT TATCAATACT GTTCTACCT GTGAGTTCCA TTATTTCTAT  
240

CTCTTATGGG CAAAGCATTG TGGGTAATTG GTGCTGGCTA ACATTGCATG GTCCGGATAG  
300

AGAAGTCCAG CTGTGAGTCT CTCCCCAAAG CAGCCCCACA GTGGAGCCTT TGGCTGGAAG  
360

TCCATGGGCC ACCCTGTTCT TGTCCATGGA GGA CTCCGAG GGTTC AAGT ATACTCTTAA  
420

GACCCACTCT GTTTAAAAAT ATATATTCTA TGTATGCGTA TATGGAATTG GAAATGTCAT  
480

TATTGGAACC TAGAAANGGC TTTGGAATAT TGATGTGGGG AGGNTTATTG AGCACCAGAT  
540

GTATTTTANC CCATGCCCCC TCCAAAAAGA AATGGTTAGT NAAAAC 586

(2) INFORMATION FOR SEQ ID NO:26:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 84 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:

GATCCTTNCA AGTGGGACTC TGGNCCTCTG ACCAGCTGTG CGGCATGGGC TAAGTCACTC  
60

TGCCCTTCGG AGCCTCTGGA AGCT 84

(2) INFORMATION FOR SEQ ID NO:27:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 134 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:

CTNTGGANTA CANCNATCCC TGGATTTAAN GAGANGGCCA GGCCACTCTA TACTCTAATC  
60

AAGGAGACCC AGAGGGCAAA TACTCATCTA GGAGAATGGG AACCAGAGGC AGAAACAGCC  
120

TTCAAAACCT TAAA

134

(2) INFORMATION FOR SEQ ID NO:28:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 332 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:

AATAAGGTTC CTTACAAAN ATCCAAGCCA GCACCTTAGT TTTCTACAA CATAAATGTA  
60

ACAAAGTTAT CTTCTACTGT ATTGCACCTT AGTCCAAAAG TAAACAACCT AAATGAAAAT  
120

TTAAATAAAT CAGACTGAAA AAGCCCAAAG AGTAAGAGGA ATACCTTATA AATGTGACTA  
180

CCCACCTAAA AATTCTTGAA CTACTTTGTT TTGCATAGGA TTTTATGGGA CTAACCAAAT  
240

GTTCCATGAA CCATGAGGTG AAAACTGCGA TTTCATGATA GCACATTGTT TTACAATTCT  
300

GATTAGAAAT CCTTCAGAAA TATTTCTGTA TC

332

(2) INFORMATION FOR SEQ ID NO:29:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 311 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:29:

ANGTAAGGTT CCTTCACAAA AACCAAGCGG GACTCCNAAA CAACCATGGT GCAATGGTGG  
60

CAAAAAGTGG GGACTGGGTC TTTCTCGCAA CTTCTGTGCC TCCTTTCATT CTCAAAAAAG  
120

GACTATTACC AAATGGGGGG GAAAAAACAT AAGCANAAAA AACCCCAAGG ACAAAGTGA  
180

AATTTAATTC CTTNATGCAA ATCTTATCTT CATCTGGTGC CTCATTACCC TGGGCCCCAA  
240

GCCTTCTAAT TAGGAAAAAA TACTGATTTC TGTTAGGCAA TTGCTTATNT TGGTGGCTTC  
300

ATCACATTTTC A 311

(2) INFORMATION FOR SEQ ID NO:30:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 880 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:30:

CAAAGTACCA AGCCCGAGAA AATACAGGTC TATTCAATTC CACCTGCTAG CCTAAACTTC  
60

AAGTAGACTT CAAAGCAATA CAAGTTTGTA TGGTCTTTTT GGCAATAGCA GGAAATGATA  
120

CAAGCGAAAT CAGTTCTTGA TTAAGGGAGG AGCAGAATTG CATTAGTTAG ATATTCTGGT  
180

AGTGCTGCAA ACTATAATGA TAAATGAAGG CAGCCCAAGA CTTAAGATGT AAAGTTATGT  
240

AGTCATGCA ATTCAATGTC AGTATTTGAA GGCTATATGA TGAATATTTT CAGAATTATA  
300

ATGAAAAAAG TAAAAACAAA TTTGCCTCTT ACTGATGCTT CAAAAATCAT TTGTGTATAT  
360

TTAACAAAAG AAGTGTCTAA ATAGATCTGA ATTTAAACCA CAGTACTGAA CACACTACAT  
420



GAGGTAACAT TGAGTATTAT CAAAGTACCA AGCCCGAGAA AATACAGGTC TATTCAATTC  
480

CACCTGCTAG CCTAAACTTC AAGTAGACTT CAAAGCAATA CAAGTTTGTA TGGTCTTTTT  
540

GGCAATAGCA GGAAATGATA CAAGCGAAAT CAGTTCTTGA TTAAGGGAGG AGCAGAATTG  
600

CATTAGTTAG ATATTCTGGT AGTGCTGCAA ACTATAATGA TAAATGAAGG CAGCCCAAGA  
660

CTTAAGATGT AAAGTTATGT AGCTCATGCA ATTCAATGTC AGTATTTGAA GGCTATATGA  
720

TGAATATTTT CAGAATTATA ATGAAAAAAG TAAAAACAAA TTTGCCTCTT ACTGATGCTT  
780

CAAAAATCAT TTGTGTATAT TTAACAAAAG AAGTGTCTAA ATAGATCTGA ATTAAACCA  
840

CAGTACTGAA CACACTACAT GAGGTAACAT TGAGTATTAT 880

(2) INFORMATION FOR SEQ ID NO:31:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 596 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:31:

AAGCAAAAGG AATGCTTATA CACTGTTGGT AGGAGTATTA GGATTACAGG CGTGAGCCTC  
60

CACTTCCAGC CGTCCACAAT CTATTGAGAT GACCATGTTG TTTTCTTCCT TCAGTCTGTT  
120

GCACTAATCA TTTCCAGCTG ATGAAATAAC GTTGCATTCC AGGGATACAC TGTACTGGGT  
180

ACTGGTGTAC ATTCCTGTTT ATATGTTACG GTATTTGGTT TGCCAAAATT TACTAGGAAA  
240

TTTCACAGAT CCACTCATAA GCGATATTAT CAGAGTTTTT CCTGTGTATG ATGTTTCACT  
300

TTGGTATCTA GATAACAATA GCATCATAGA ACCAGTAAAA AATATTACAT GCTCTTCCAA  
360

GTTTTTAAGA CATTTTATC GAATTGGTAA TTTTCATGTG TTTGGTATAA TATACAAAAG  
420

AATACATTTG AACTGGGAAT TTACATGTGT GTCAGGGGCA GGGGTGAGAG TTTTAAATT  
480

ACCAATTTAT TGTCTTCACT TTGTTCTTGA ATGAGTTGTG GTAGTCAGTG TCTTTCTAGG  
540

AATTTGTCTA CTTCCACAAA GATATTTGTC AAAATACTAA TCCCTTGTTA TGGGAA 596

(2) INFORMATION FOR SEQ ID NO:32:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 402 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:32:

AAGCGGCACT CATCACTTCT ACCCTTATTT CTGCTGGCAG AAACCCAGTC ACAAGCTCCA  
60

CTGACATGCA AGGAGATTTG GGAAATGCAG TCTCTGTCAG CTAGCCCAAA CTCTAAGAAG  
120

CCAAAGGAAA TATGTATTTT GGGTGGAGAT CTAGCCATCT TACCACACTA TGGTGGTCCA  
180

GTAGAGGTCT ATCAAAATAT TAATTCACAG AAGACTAAAG ACACATTTAC AATGAAGGTT  
240

TACAAACTT ATCTGCAAAG AAAAAGCCAG AACATGTTTT ATTGTGGAAT AGTTCTAAAA  
300

TTGCTTATAG ATGAAAAGAA CAAAACAAAT ATTTAAATCA GTCACCTCTA GAATAGTGAA  
360

AGGCCAAAAA CTGCATTTC AAAATGAAAT ATCACTCTGG GA 402

(2) INFORMATION FOR SEQ ID NO:33:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 384 base pairs
- (B) TYPE: nucleic acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:33:

AAGCGAAAC ACCCTCATGT GAATGAGGGT TTTATGTTGT TAATGTGGTG GGTGAGTGAG  
60

CCCCATTGTG TTGTGGTAAA TATGTAGAGG GAGTATAGGG CTGTGACTAG TATGTTGAGT  
120

CCTGTAAGTA GGAGAGTGAT ATTTGATCAG GAGAACGTGG TTACTAGCAC AGAGAGTTCT  
180

CCCAGTAGGT TAATAGTGGG GGGTAAGGCG AGGTTAGCGA GGCTTGCTAG AAGTCATCAA  
240

AAAGCTATTA GTGGGAGTAG AGTTTGAAGC CCTTGAGAGA GGATTATGAT GCGACTGTGA  
300

GTGCGTTCGT AGTTTGAGTT TGCTAGGCAG AATAGTAATG AGGATGTAAG TCCGTGGGCG  
360

ATTATGAGAA TGACTGCGCC GGTG 384

(2) INFORMATION FOR SEQ ID NO:34:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 285 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:34:

TACTGTGATG TTGTTGCTAT CTTTCATCATC TAACACCTGT GATTTTATAT CCATGGTCAC  
60

ATATGGAAAA CCCCCAAGGA CAGCCATAAC CTCTTCATAT TTTTCATCTT CAAGGAAGTG  
120

CAGTAGAGTG TGACGATCTG ATTCTTTTAA ACTCACCAAA TCCTGGATAG TTTTAATTTT  
180

ATACTTCTTA TGATTAGAAA CCCGTCTAAG ATTGTCCTCT TCAATATGAG GGAGCTGCAG  
240

AAGGGGAGAC TTAAATTGCT GAAGTCCCTG AACGGCCATC TGAGA 285

(2) INFORMATION FOR SEQ ID NO:35:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 285 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:35:

TACTGTGATG TTGTTGCTAT CTTTCATCATC TAACACCTGT GATTTTATAT CCATGGTCAC  
60

ATATGGAAAA CCCCCAAGGA CAGCCATAAC CTCTTCATAT TTTTCATCTT CAAGGAAGTG  
120

CAGTAGAGTG TGACGATCTG ATTCTTTTAA ACTCACCAAA TCCTGGATAG TTTTAATTTT  
180

ATACTTCTTA TGATTAGAAA CCCGTCTAAG ATTGTCCTCT TCAATATGAG GGAGCTGCAG  
240

AAGGGGAGAC TTAAATTGCT GAAGTCCCTG AACGGCCATC TGAGA 285

(2) INFORMATION FOR SEQ ID NO:36:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 333 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:36:

AAGCGGACTT TGGAGGGCAG TGTTATTTTC CCAAAGAAAG ACGGCCAAGG GCAGAGGCAT  
60

GGATTCTTTG CAGAGCACTT CCTTTTGGTT TTTTCAGTACT GTTTCATAGA CAGTGGGCTC  
120

ACATGTTTCCT GATAGTGCTG CAGTTGCTTA GAAAGCATCC CAGTTAATTG CAGTAATTAG  
180

AACTTCTGGA ATATGCTAGG GCAGAAGTAT GTCAAGTATG TCACATGAAG AAAATGTGAA  
240

ATTCAAGAGT AATCCACACG TGAGAAACTA GACAATGTAC ATTCATGTGT TCTCTTGAAA  
300

GGAAAGGGAG AGCTGTAAGC TATCGATACC GTC

333